## AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions, and listings, of claims:

1       1.     (Currently Amended) A method of interleaving speech data over a

2    plurality frames, comprising:

3           interleaving the speech data according to a first algorithm over plural

4    frames communicated over a wireless channel for a first set of speech data; and

5           interleaving the speech data according to a second algorithm over plural

6    frames communicated over the wireless channel for a second set of speech data.


1       2.     (Canceled)


1       3.     (Currently Amended) The method of claim 1, wherein interleaving the

2    speech data according to the first or second algorithm comprises interleaving over frames

3    of a multiframe.


1       4.     (Original) The method of claim 3, wherein interleaving over frames of the

2    multiframe comprises interleaving over a General Packet Radio Service multiframe.


1       5.     (Currently Amended) ~~The method of claim 3~~ A method of interleaving

2    data over a plurality frames, comprising:

3           interleaving the data according to a first algorithm over plural frames

4    communicated over a wireless channel for a first set of data; and

5           interleaving the data according to a second algorithm over plural frames

6    communicated over the wireless channel for a second set of data,

7           wherein interleaving the data according to the first or second algorithm

8    comprises interleaving over frames of a multiframe,

9           wherein the multiframe comprises plural blocks, each block having four

10    frames, each frame containing plural bursts, and the data is carried in data frame N

11    starting in block B(x), and wherein interleaving the data frame N according to the first

12    and second algorithms comprises interleaving the data frame N over blocks B(x + 2k) and

13    B(x + 2k + 2), where k = INT(N/2).

1      6.    (Original) The method of claim 5, wherein interleaving the data according
2  to the first algorithm comprises interleaving the data frame N over bursts in the last three
3  frames in block $B(x + 2k)$ and the first frame in block $B(x + 2k + 2)$, if N is even.

1      7.    (Original) The method of claim 6, wherein interleaving the data according
2  to the second algorithm comprises interleaving the data frame N over bursts in the last
3  frame in block $B(x +2k)$ and the first three frames in block $B(x + 2k + 2)$, if N is odd.

1      8.    (Original) The method of claim 7, wherein interleaving the data according
2  to the first and second algorithms comprises interleaving speech data.

1      9.    (Original) The method of claim 8, wherein interleaving the speech data
2  comprises interleaving speech data of a half-rate mobile station.

1     10.    (Original) The method of claim 7, further comprising:
2                    receiving an end-of-data indicating frame to indicate that the data frame N
3  is the last data frame; and
4                   ,interleaving the end-of-data indicating frame over bursts in the last frame
5  in block $B(x + 2k)$ and the first two frames of block $(Bx + 2k + 2)$, if M is even.

1     11.    (Original) The method of claim 10, further comprising repeating the end-
2  of-data indicating frame over bursts in the last two frames of block $B(x +2k + 2)$.

1     12.    (Original) The method of claim 10, further comprising interleaving the
2  end-of-data indicating frame over bursts in the last three frames of block $B(x + 2k + 2)$, if
3  M is odd.

1     13.    (Original) The method of claim 3, wherein the multiframe comprises
2  plural blocks and each block comprises plural frames, each frame containing plural
3  bursts, the data being carried in data frames interleaved over bursts in the plural frames,
4  the method further comprising:

5     receiving an end-of-data indicating frame to indicate that a data frame is

6 the last data frame; and

7     interleaving the end-of-data indicating frame according to predetermined

8 algorithms,

9     wherein interleaving the data frames according to the first and second

10 algorithms and the end-of-data indicating frame according to the predetermined

11 algorithms enables the end-of-data indicating frame to end within the same block

12 carrying the last data frame.


1   14.  (Currently Amended) ~~The method of claim 13~~ A method of interleaving

2 data over a plurality frames, comprising:

3     interleaving the data according to a first algorithm over plural frames

4 communicated over a wireless channel for a first set of data; and

5     interleaving the data according to a second algorithm over plural frames

6 communicated over the wireless channel for a second set of data,

7     wherein interleaving the data according to the first or second algorithm

8 comprises interleaving over frames of a multiframe,

9     wherein the multiframe comprises plural blocks and each block comprises

10 plural frames, each frame containing plural bursts, the data being carried in data frames

11 interleaved over bursts in the plural frames, the method further comprising:

12     receiving an end-of-data indicating frame to indicate that a data frame is

13 the last data frame; and

14     interleaving the end-of-data indicating frame according to at least one

15 predetermined algorithm,

16     wherein interleaving the data frames according to the first and second

17 algorithms and the end-of-data indicating frame according to the at least one

18 predetermined algorithm enables the end-of-data indicating frame to end within the same

19 block carrying the last data frame,

20     wherein the last data frame is data frame M starting in block B(x),

21 wherein, if M is odd, interleaving the data frame M comprises interleaving the data frame

22 M over bursts in the last frame in block B(x) and the first three frames of B(x + 2), and

23    wherein interleaving the end-of-data indicating frame comprises interleaving the end-of-

24    data indicating frame over bursts in the last three frames of block B(x + 2).

1        15.    (Original) The method of claim 14, wherein, if M is even, interleaving the

2    data frame M comprises interleaving the data frame M over bursts in the last three frames

3    in block B(x) and first frame in block B(x + 2), and interleaving the end-of-data

4    indicating frame comprises interleaving the end-of-data indicating frame over bursts in

5    the last frame in block B(x) and first two frames in block B(x + 2).

1        16.    (Original) The method of claim 15, wherein the end-of-data indicating

2    frame comprises a SID_FIRST frame according to a General Packet Radio Service

3    protocol.

1        17.    (Currently Amended) A system for communicating over a wireless

2    channel in a mobile communications network, comprising:

3        an interface adapted to receive traffic data frames from a half-rate mobile

4    station; and

5        a controller adapted to process ~~interleave~~ a first data frame <u>n, n being an</u>

6    <u>even number, from the half-rate mobile station interleaved</u> over plural bursts according to

7    a first algorithm and to process ~~interleave~~ a second data frame <u>n + 1, n + 1 being an odd</u>

8    <u>number, from the half-rate mobile station interleaved</u> over plural bursts according to a

9    second algorithm.

1        18.    (Currently Amended) The system of claim 17, wherein the <u>first and</u>

2    <u>second</u> traffic data frames comprise <u>respective first and second</u> speech <u>frames</u>.

1        19.    (Original) The system of claim 17, wherein each data frame is interleaved

2    over four bursts.

1        20.     (Currently Amended) ~~The system of claim 17~~ A system for

2  communicating over a wireless channel in a mobile communications network,

3  comprising:

4               an interface adapted to receive traffic data frames from a half-rate mobile

5  station; and

6               a controller adapted to process a first data frame interleaved over plural

7  bursts according to a first algorithm and to process a second data frame interleaved over

8  plural bursts according to a second algorithm,

9               wherein the bursts are part of a multiframe, the multiframe comprising

10  plural blocks, each block comprising four bursts, and wherein data frames I, I = 0 to M,

11  are received starting in block $B(x)$, the controller adapted to interleave data frame I over

12  blocks $B(x + 2k)$ and $B(x + 2k + 2)$, where $k = INT(I/2)$.

1        21.     (Original) The system of claim 20, wherein the controller is adapted to:

2               for I being even, interleave traffic data frame I over the last three bursts in

3  block $B(x + 2k)$ and the first burst in block $B(x + 2k + 2)$; and

4               for I being odd, interleave traffic data frame I over the last three bursts in

5  block $B(x + 2k)$ and the first burst in block $B(x + 2k + 2)$.

1        22.     (Original) The system of claim 21, wherein the interface is adapted to

2  further receive an end-of-data indicating frame, the end-of-data indicating frame

3  interleaved a first way if M is even and a second way if M is odd.

1        23.     (Original) The system of claim 22, wherein the controller is adapted to:

2               for M being even, interleave the end-of-data indicating frame over the last

3  burst in block $B(x + 2k)$ and the first two bursts in block $B(x + 2k + 2)$; and

4               for M being odd, interleave the end-of-data indicating frame over the last

5  three bursts of $B(x + 2k + 2)$.

1     24.    (Original) The system of claim 23, wherein the end-of-data indicating

2  frame comprises a SID_FIRST frame according to a General Packet Radio Service

3  protocol.

1     25.    (Original) The system of claim 23, wherein the end-of-data indicating

2  frame indicates that discontinuous transmission mode is starting.

1     26.    (Original) The system of claim 23, wherein the traffic data frames are

2  carried in a wireless channel portion, the interface adapted to receive traffic data frames

3  from another mobile station in block $B(x + 2k + 4)$.

1     27.    (Original) The system of claim 26, wherein the traffic data frames from

2  the half-rate mobile station comprises speech data.

1     28.    (Original) The system of claim 27, wherein the traffic data frames from

2  the other mobile station comprises another type of data.

1     29.    (Original) The system of claim 27, wherein the other mobile station

2  comprises a full-rate mobile station.

1     30.    (Currently Amended) An article comprising at least one storage medium

2  containing instructions that when executed cause a system to:

3          receive traffic over a wireless channel portion from a first mobile station

4  involved in half-rate communication;

5          detect that the first mobile station has entered discontinuous transmission

6  mode; and

7          in response to detecting that the first mobile station has entered

8  discontinuous transmission mode, re-assign the wireless channel portion to a second

9  mobile station to enable multiplexing of multiplex traffic from [[a]] the second mobile

10  station onto the wireless channel portion while the first mobile station is in discontinuous

11  transmission mode.

1    31.    (Currently Amended) The article of claim 30, wherein the instructions

2    when executed cause the system to:

3            receive speech traffic from the first mobile station over the wireless

4    channel portion.


1    32.    (Original) The article of claim 31, wherein the instructions when executed

2    cause the system to receive another type of traffic from the second mobile station.


1    33.    (Original) The article of claim 30, wherein the instructions when executed

2    cause the system to interleave a first traffic frame from the first mobile station over plural

3    bursts according to a first algorithm and to interleave a second traffic frame from the first

4    mobile station over plural bursts according to a second algorithm.


1    34.    (Original) A data signal embodied in a carrier wave and containing

2    instructions that when executed cause a system to:

3            interleave a first speech traffic frame from a mobile station over plural

4    bursts according to a first algorithm; and

5            interleave a second speech traffic frame from the mobile station over

6    plural bursts according to a second algorithm.


1    35.    (Currently Amended) A system for use in a mobile communications

2    network, comprising:

3            a wireless interface adapted to receive traffic over a wireless channel

4    portion from a first mobile station involved in half-rate communications; and

5            a controller adapted to receive an indication that the first mobile station

6    has entered discontinuous transmission mode and, in response to receiving the indication

7    that the first mobile station has entered discontinuous transmission mode, to multiplex

8    traffic from a second mobile station onto the wireless channel portion while the first

9    mobile station is in discontinuous transmission mode.

1      36.     (New) The method of claim 1, wherein interleaving the speech data

2 according to the first algorithm over plural frames for the first set of speech data

3 comprises interleaving the first set of speech data from a half-rate mobile station

4 according to the first algorithm over plural frames, and

5             wherein interleaving the speech data according to the second algorithm

6 over plural frames for the second set of speech data comprises interleaving the second set

7 of speech data from a half-rate mobile station according to the second algorithm over

8 plural frames.

1      37.     (New) The system of claim 17, wherein the bursts are part of a

2 multiframe, the multiframe having plural blocks,

3             wherein the first data frame n is interleaved according to the first

4 algorithm by interleaving the first data frame n in bursts of two different blocks, the two

5 different blocks selected based on n being an even number, and

6             wherein the second data frame n + 1 is interleaved according to the second

7 algorithm by interleaving the second data frame n + 1 in bursts of two different blocks,

8 the two different blocks selected based on n + 1 being an odd number.

1      38.     (New) The system of claim 17, wherein the first data frame n is

2 interleaved according to the first algorithm in response to n being an even number, and

3 the second data frame is interleaved according to the second algorithm in response to n +

4 1 being an odd number.

1      39.     (New) The article of claim 30, wherein the instructions when executed

2 cause the system to further:

3             receive a request from the first mobile station to re-acquire the wireless

4 channel portion, the request transmitted by the first mobile station in response to the first

5 mobile station exiting discontinuous transmission mode; and

6             sending an assignment message to the first mobile station to assign the

7 wireless channel portion in response to the request.

1    40.    (New) The data signal of claim 34, wherein interleaving the first speech

2    traffic frame according to the first algorithm over plural bursts comprises interleaving the

3    first speech traffic frame from a half-rate mobile station according to the first algorithm

4    over plural bursts, and

5              wherein interleaving the second speech traffic frame according to the

6    second algorithm over plural bursts comprises interleaving the second speech traffic

7    frame from a half-rate mobile station according to the second algorithm over plural

8    bursts.


1    41.    (New) The system of claim 35, wherein the controller is adapted to

2    further:

3              receive a request from the first mobile station to re-acquire the wireless

4    channel portion, the request transmitted by the first mobile station in response to the first

5    mobile station exiting discontinuous transmission mode; and

6              sending an assignment message to the first mobile station to assign the

7    wireless channel portion in response to the request.